

I claim:

1. A device for synchronization of a mobile radio receiver to a frame structure from a radio signal received from a base station, wherein a frame is divided into a stipulated number N of time slots, and the base station, per frame, sends a sequence of known frame synchronization codes known in the mobile radio receiver, comprising:
  - a first unit to determine the energy values that are received for N consecutive time slots for each frame synchronization code per time slot by the mobile radio receiver,
  - at least two intermediate memories to store the received energy values, and
  - a second unit to calculate the frame start of the radio signal from the energy values stored in the at least two intermediate memories and as a function of the known frame synchronization code.
2. The device according to Claim 1, wherein
  - each sequence of frame synchronization codes that can be sent by the base station in a frame forms a code group, and
  - the code groups are stored in at least two code group memories that are read-only memories.
3. The device according to Claim 2, wherein
  - the second unit is also laid out to calculate the code group sent by the base station from the energy values stored in the at least two intermediate memories and as a function of the known code groups.
4. The device according to Claim 2, wherein
  - an address generation unit is connected after the at least two code group memories, which generates addresses from the elements of the code group released from the at least two code group memories,

- the addresses are each fed to one of the at least two intermediate memories, and
- the at least two intermediate memories issue an energy value stored in it, which is designated by the address supplied to the corresponding intermediate memory.

5. The device according to Claim 4, comprising

- a first control unit to control the control output of elements of code groups from the at least two code group memories.

6. The device according to Claim 4, comprising

- a second control unit to control generation of the addresses in the address generation units.

7. The device according to Claim 4, comprising

- a third control element to control supply of addresses to the at least two intermediate memories.

8. The device according to Claim 4, comprising

- an adder connected after the at least two intermediate memories, which sums up the energy values released by the at least two intermediate memories, in which at least one of the summands, if necessary, is replaced by the energy value zero.

9. The device according to Claim 8, comprising

- a fourth control unit to control supply of summands to the adder.

10. The device according to Claim 8, comprising

- an accumulator connected after adder, which sums up a stipulated number of energy values released in succession by the adder.

11. The device according to Claim 10, comprising
  - a third unit connected after the accumulator to determine the largest energy value issued by the accumulator.
12. The device according to Claim 11, comprising
  - a fourth unit connected after the third unit to calculate the frame start of the radio signal sent by the base station and the code group sent by the base station.
13. The device according to Claim 1, wherein
  - the energy values entered in the at least two intermediate memories correspond to the time slot in which the frame synchronization codes underlying them were received and are marked with an index  $j$ , and
  - the received energy values are entered as a function of their index  $j$  in the at least two intermediate memories.
14. The device according to Claim 13, wherein
  - each of the received energy values is entered in precisely one of the at least two intermediate memories, and
  - at least one energy value is additionally entered in another of the at least two intermediate memories.
15. The device according to Claim 2, wherein
  - the elements of the code groups corresponding to the time slot to which they refer are marked with the index  $n$ , and
  - each element of code groups are entered as a function of their index  $n$  in precisely one of the at least two code group memories, and
  - the number of code group memories is equal to the number of intermediate memories.

16. The device according to Claim 15, wherein

- the elements of code groups with an even index  $n$  are entered in a first code group memory and the element of the code group with an odd index  $n$  are entered in a second code group memory.

17. The device according to Claim 1, wherein

- the first unit is laid out so that the energy values are calculated by means of correlations of the received frame synchronization codes with a common sequence underlying the known frame synchronization codes and a subsequent Hadamard transformation.

18. The device according to Claim 1, wherein

- data transmission between the base station and the mobile radio receiver is based on the UMTS standard.